

CLAIMS

1. A battery pack comprising a lithium ion secondary battery and a current interrupting device for protecting said secondary battery,

said secondary battery comprising a positive electrode and a negative electrode, a separator interposed between said positive and negative electrodes and a non-aqueous electrolyte,

said current interrupting device comprising a recoverable device and a non-recoverable device,

said recoverable device and said non-recoverable device being connected in series with each other, and

said non-recoverable device having an operating temperature of not less than 90°C and less than 150°C.

2. The battery pack in accordance with claim 1, wherein said recoverable device comprises a bimetallic device, a shape memory alloy device or a PTC device, and said non-recoverable device comprises a thermal fuse or a pattern fuse.

3. The battery pack in accordance with claim 1, wherein said non-recoverable device has an operating temperature of not less than 90°C and not greater than 130°C.

4. The battery pack in accordance with claim 1, wherein said positive electrode comprises a composite oxide containing lithium, cobalt and magnesium.

5. The battery pack in accordance with claim 4, wherein said composite oxide is represented by the general

formula: $\text{Li}_z\text{Co}_{1-x-y}\text{Mg}_x\text{M}_y\text{O}_2$, where the element M is at least one selected from the group consisting of Al, Ti, Sr, Mn, Ni and Ca, and the values x, y and Z respectively satisfy:

$$0.005 \leq x \leq 0.1;$$

$$0.001 \leq y \leq 0.03; \text{ and}$$

$$0.97 \leq z \leq 1.02.$$

6. The battery pack in accordance with claim 1, wherein said non-aqueous electrolyte comprises a non-aqueous solvent and a solute dissolved in said non-aqueous solvent, and said non-aqueous solvent comprises ethylene carbonate and γ -butyrolactone.